AMENDMENTS TO THE SPECIFICATION

Please insert the heading "BACKGROUND OF THE INVENTION" in line 4 on page 1 of the specification.

Please replace the heading "DISCLOSURE OF INVENTION" with --SUMMARY OF THE INVENTION-- in line 6 on page 11 of the specification.

Please amend the paragraph beginning on page 11, line 7 and ending at line 19, as follows: According to the present invention ~~(Claim 1)~~, there is provided an optical disc device comprising: a high frequency band processing circuit for removing low frequency components of signals outputted from photodetectors of an optical pickup, and subjecting the signals to AD conversion with a high-speed low-bit AD converter, and thereafter, generating various kinds of signals required for recording/playback of an optical disc by digital processing; and a low frequency band processing circuit for removing high frequency components of the signals outputted from the photodetectors of the optical pickup, and subjecting the signals to AD conversion with a low-speed high-bit AD converter, and thereafter, generating various kinds of signals required for recording/playback of the optical disc by digital processing.

Please amend the paragraph beginning on page 12, line 7 and ending at line 14, as follows: According to the present invention ~~(Claim 2),~~ in the optical disc device ~~defined in Claim 1~~, the high frequency band processing circuit includes plural stages of HPFs having different cutoff frequencies which are in ascending order with respect to the signals outputted from the photodetectors of the pickup, and performs detection of plural signals required for recording/playback of the optical disc using signals of desired frequency bands which are outputted from the respective HPFs.

Please amend the paragraph beginning on page 12, line 21 and ending on page 13 at line 11, as follows: According to the present invention ~~(Claim 3),~~ in the optical disc device ~~defined in Claim 1~~, the high frequency band processing circuit comprises: first HPFs for removing DC components of the output signals from the respective photodetectors of the pickup

and level fluctuations in low frequencies, said first HPFs being provided correspondingly to the output signals from the respective photodetectors; second HPFs for receiving the output signals from the first HPFs, and removing frequencies which are higher than the cutoff frequency of the first HPFs and equal to and lower than a predetermined cutoff frequency; AD converters for receiving the output signals from the second HPFs, and AD-converting the output signals from the second HPFs; and third HPFs for receiving the digital signals outputted from the AD converters, and removing frequencies which are higher than the cutoff frequency of the second HPFs and equal to and lower than a predetermined cutoff frequency.

Please amend the paragraph beginning on page 13, line 20 and ending on page 14 at line 7, as follows: According to the present invention ~~(Claim 4),~~ in the optical disc device ~~defined in Claim~~, the high frequency band processing circuit comprises: second HPFs for removing frequencies which are equal to and lower than a predetermined cutoff frequency of the output signals from the respective photodetectors of the pickup, said second HPFs being provided correspondingly to the output signals from the respective photodetectors; AD converters for receiving the output signals from the second HPFs, and AD-converting the output signals from the second HPFs; and third HPFs for receiving the digital signals outputted from the AD converters, and removing frequencies which are higher than the cutoff frequency of the second HPFs and equal to and lower than a predetermined cutoff frequency.

Please amend the paragraph beginning on page 14, line 16 and ending at line 22, as follows: According to the present invention ~~(Claim 5)~~, an optical disc device including a plurality of HPFs having different cutoff frequencies which are in ascending order with respect to signals outputted from photodetectors of a pickup, and performing detection of plural signals which are required for recording/playback of an optical disc, using signals of desired frequency bands, which are outputted from the respective HPFs.

Please amend the paragraph beginning on page 15, line 4 and ending at line 18, as follows: According to the present invention ~~(Claim 6)~~, there is provided an optical disc device comprising: first HPFs for removing DC components of output signals from photodetectors of a pickup and level fluctuations in low frequencies, said first HPFs being provided correspondingly

to the output signals from the respective photodetectors; second HPFs for receiving the output signals from the first HPFs, and removing frequencies which are higher than the cutoff frequency of the first HPFs and equal to and lower than a predetermined cutoff frequency; AD converters for receiving the output signals from the second HPFs, and AD-converting the output signals from the second HPFs; and third HPFs for receiving the digital signals outputted from the AD converters, and removing frequencies which are higher than the cutoff frequency of the second HPFs and equal to and lower than a predetermined cutoff frequency.

Please amend the paragraph beginning on page 16, line 2 and ending at line 13, as follows: According to the present invention ~~(Claim 7)~~, there is provided an optical disc device comprising: second HPFs for removing frequencies which are equal to and lower than a predetermined cutoff frequency of output signals from photodetectors of a pickup, said second HPFs being provided correspondingly to the output signals from the respective photodetectors; AD converters for receiving the output signals from the second HPFs, and AD-converting the output signals from the second HPFs; and third HPFs for receiving the digital signals outputted from the AD converters, and removing frequencies which are higher than the cutoff frequency of the second HPFs and equal to and lower than a predetermined cutoff frequency.

Please amend the paragraph beginning on page 16, line 22 and ending on page 17 at line 7, as follows: According to the present invention ~~(Claim 8)~~, in the optical disc device ~~defined in any of Claims 3 and 6~~, the cutoff frequency of the first HPFs is a frequency that does not adversely affect jitter of the signals outputted from the respective photodetectors of the pickup.

Please amend the paragraph beginning on page 17, line 8 and ending at line 12, as follows: According to the present invention ~~(Claim 9)~~, the optical disc device ~~defined in any of Claims 3, 4, 6, and 7~~ further comprises a wobble signal generation circuit for generating a wobble signal using the digital signals outputted from the AD converters.

Please amend the paragraph beginning on page 17, line 21 and ending on page 18 at line 3, as follows: According to the present invention ~~(Claim 10)~~, in the optical disc device ~~defined in Claim 9~~, the wobble signal generation circuit comprises: a logic operation circuit for

performing an arithmetic operation using the digital signals outputted from the AD converters to calculate a pushpull tracking error signal; and a digital BPF for generating a wobble signal from the pushpull tracking error signal calculated by the logic operation circuit.

Please amend the paragraph beginning on page 18, line 11 and ending at line 14, as follows: According to the present invention ~~(Claim 11)~~, in the optical disc device ~~defined in Claim 10~~, the cutoff frequency of the second HPFs is a frequency equal to or lower than a passband frequency of the digital BPF.

Please amend the paragraph beginning on page 18, line 19 and ending on page 19 at line 1, as follows: According to the present invention ~~(Claim 12)~~, the optical disc device ~~defined in any of Claims 3, 4, 6, and 7~~ further comprises a pushpull track cross signal generation circuit for generating a pushpull track cross signal using the digital signals outputted from the AD converters; wherein said pushpull track cross signal generated by the pushpull track cross signal generation circuit is used as a track cross signal during high-speed seeking of an optical disc.

Please amend the paragraph beginning on page 19, line 11 and ending at line 19, as follows: According to the present invention ~~(Claim 13)~~, in the optical disc device ~~defined in Claim 12~~, the pushpull track cross signal generation circuit comprises: a logic operation circuit for performing an arithmetic operation using the digital signals outputted from the AD converters to calculate a pushpull tracking error signal; and a binarization circuit for binarizing the pushpull tracking error signal calculated by the logic operation circuit at a zerocross point to generate a pushpull track cross signal.

Please amend the paragraph beginning on page 20, line 4 and ending at line 8, as follows: According to the present invention ~~(Claim 14)~~, in the optical disc device ~~defined in any of Claims 3, 4, 6, and 7~~, the cutoff frequency of the third HPFs is a frequency that enables removal of voltage level fluctuations, and removal of wobble components.

Please amend the paragraph beginning on page 20, line 15 and ending at line 20, as follows: According to the present invention ~~(Claim 15)~~, the optical disc device ~~defined in any of~~

~~Claims 3, 4, 6, and 7~~ further comprises a phase difference tracking error signal detection circuit for generating a phase difference tracking error signal by digital processing using the digital signals outputted from the third HPFs.

Please amend the paragraph beginning on page 21, line 5 and ending at line 19, as follows: According to the present invention ~~(Claim 16)~~, in the optical disc device ~~defined in Claim 1~~, the low frequency band processing circuit comprises: LPFs having a cutoff frequency equal to or lower than 1/2 of a sampling frequency, said LPFs being provided correspondingly to signals outputted from photodetectors of a pickup; a time-division AD converter for performing AD conversion of plural channels while successively selecting the output signals from the first LPFs; a servo error signal generation circuit for performing a servo error signal generation operation by digital processing using the output from the time-division AD converter to generate a servo error signal; and a servo operation circuit for performing a digital servo operation on the basis of the servo error signal generated by the servo error signal generation circuit to generate a driving signal for a driving system.

Please amend the paragraph beginning on page 22, line 14 and ending at line 24, as follows: According to the present invention ~~(Claim 17)~~, there is provided an optical disc device comprising: a time-division AD converter for performing AD conversion of plural channels while successively selecting signals outputted from photodetectors of a pickup; a servo error signal generation circuit for performing a servo error signal generation operation by digital processing using the output from the time-division AD converter to generate a servo error signal; and a servo operation circuit for performing a digital servo operation on the basis of the servo error signal generated by the servo error signal generation circuit to generate a driving signal for a driving system.

Please amend the paragraph beginning on page 23, line 19 and ending on page 24 at line 7, as follows: According to the present invention ~~(Claim 18)~~, there is provided an optical disc device comprising: LPFs having a cutoff frequency equal to or lower than 1/2 of a sampling frequency, said LPFs being provided correspondingly to signals outputted from photodetectors of a pickup; a time-division AD converter for performing AD conversion of plural channels while

successively selecting the output signals from the first LPFs; a servo error signal generation circuit for performing a servo error signal generation operation by digital processing using the output from the time-division AD converter to generate a servo error signal; and a servo operation circuit for performing a digital servo operation on the basis of the servo error signal generated by the servo error signal generation circuit to generate a driving signal for a driving system.

Please amend the paragraph beginning on page 25, line 2 and ending at line 17, as follows: According to the present invention ~~(Claim 19)~~, in the optical disc device ~~defined in any of Claims 16 to 18~~, when said servo error signal generation circuit performs the servo error signal generation operation using the signals from the photodetectors of the optical pickup receiving a main beam and signals from the photodetectors of the optical pickup receiving a sub beam, the servo error signal generation circuit controls the operation timing of arithmetic processing for the signals from the photodetectors receiving the main beam, which are outputted from the time-division AD converter, and the operation timing of arithmetic processing for the signals from the photodetectors receiving the sub beam, which are outputted from the time-division AD converter, separately from each other, and the servo operation circuit performs the digital servo operation using the signals generated by the servo error signal generation circuit to generate a driving signal for a driving system.

Please amend the paragraph beginning on page 25, line 24 and ending on page 26 at line 11, as follows: According to the present invention ~~(Claim 20)~~, in the optical disc device ~~defined in any of Claims 16 to 18~~, when the servo error signal generation circuit performs the servo error signal generation operation using the signals from the photodetectors of the optical pickup receiving a main beam and signals from the photodetectors of the optical pickup receiving a sub beam, the servo error signal generation circuit further includes a high-pass phase-lead filter for correcting, by phase compensation, a delay time up to the start of the arithmetic processing for the signals from the photodetectors receiving the sub beam, with respect to the start time of the arithmetic processing for the signals from the photodetectors receiving the main beam.

Please amend the paragraph beginning on page 26, line 18 and ending on page 27 at line 1, as follows: According to the present invention ~~(Claim 21)~~, in the optical disc device ~~defined in any of Claims 16 to 18~~, the servo error signal generation circuit has a servo error signal generation program for generating plural kinds of servo error signals, and includes an operation unit for performing a servo error signal generation operation using the servo error signal generation program to generate servo error signals, and the operation unit generates plural servo error signals by time-division.

Please amend the paragraph beginning on page 27, line 9 and ending at line 21, as follows: According to the present invention ~~(Claim 22)~~, in the optical disc device ~~defined in any of Claims 16 to 18~~, the servo error signal generation circuit has plural servo error signal generation programs for performing servo error signal generation operations which are adapted to the structure of the optical pickup, recording/playback media, and recording/playback mode, and includes an operation unit for performing the servo error signal generation operations using the servo error signal generation programs to generate servo error signals, and the operation unit performs the servo error signal generation operations while selecting the servo error signal generation programs according to the structure of the optical pickup, recording/playback media, and recording/playback mode.

Please amend the paragraph beginning on page 28, line 2 and ending at line 9, as follows: According to the present invention ~~(Claim 23)~~, in the optical disc device ~~defined in Claim 22~~, there are plural servo error signal generation programs for each kind of servo error signal, and the operation unit performs, for each kind of servo error signal, the servo error signal generation operations while selecting the servo error signal generation programs according to the structure of the optical pickup, recording/playback media, and recording/playback mode.

Please amend the paragraph beginning on page 28, line 16 and ending at line 20, as follows: According to the present invention ~~(Claim 24)~~, in the optical disc device ~~as defined in Claim 23~~, wherein the operation unit changes, for each kind of servo error signal, the frequency of use of each servo error signal generation program for generating a desired servo error signal.

Please amend the paragraph beginning on page 28, line 24 and ending on page 29 at line 7, as follows: According to the present invention ~~(Claim 25)~~, in the optical disc device ~~defined in Claim 24~~, when generating, as servo error signals, full-addition signals (hereinafter referred to as AS signals), focus error signals (hereinafter referred to as FE signals), and tracking error signals (hereinafter referred to as TE signals), said operation unit uses the servo error signal generation programs so that the generation frequency of the AS signals becomes lower than the generation frequencies of the FE signals and TE signals.

Please amend the paragraph beginning on page 29, line 13 and ending at line 22, as follows: According to the present invention ~~(Claim 26)~~, the optical disc device ~~as defined in any of Claims 16 to 18~~ further includes a timing control circuit for controlling the operation timings of the time-division AD converter and the servo error signal generation circuit; wherein the timing control circuit makes the timing at which acquisition of signals from all the photodetectors required for generating one servo error signal by the servo error signal generation circuit is completed, coincide with the timing at which AD conversion of the signals from all the photodetectors by the time-division AD converter is ended.

Please amend the paragraph beginning on page 30, line 3 and ending at line 24, as follows: According to the present invention ~~(Claim 27)~~, the optical disc device ~~defined in any of Claims 16 to 18~~ further includes a timing control circuit for controlling the operation timings of the time-division AD converter and the servo error signal generation circuit; wherein when the servo error signal generation circuit performs the servo error signal generation operation using the signals from the photodetectors of the optical pickup receiving the main beam and the signal from the photodetectors receiving the sub beam, the timing control circuit makes the timing at which acquisition of signals from all the photodetectors receiving the main beam, which are required for generating one servo error signal by the servo error signal generation circuit, is completed, coincide with the timing at which AD conversion of the signals from all the photodetectors receiving the main beam by the time-division AD converter is ended, and the servo error signal generation circuit performs the servo error signal generation operation using the signals from the photodetectors receiving the main beam, which are AD-converted by the time-division AD converter, and the signals from the photodetectors receiving the sub beam,

which are AD-converted one-sampling-period previously to the AD-converted signals from the photodetectors receiving the main beam.

Please amend the paragraph beginning on page 31, line 5 and ending at line 22, as follows: According to the present invention ~~(Claim 28)~~, the optical disc device defined ~~in any of Claims 16 to 18~~ further includes a timing control circuit for controlling the operation timings of the time-division AD converter and the servo error signal generation circuit; wherein, when the servo error signal generation circuit repeats the operation of generating plural kinds of servo error signals using the AD conversion result of the same channel, the servo error signal generation circuit performs, with higher priority, the operation of generating a servo error signal that is more likely to be affected by phase delay and, during the servo error signal generation operation that is initially carried out by the servo error signal generation circuit, said timing control circuit makes the timing at which acquisition of signals from all the photodetectors required for generating the corresponding servo error signal is completed, coincide with the timing at which AD conversion of the signals from all the photodetectors by the time-division AD converter is ended.

Please amend the paragraph beginning on page 32, line 4 and ending at line 21, as follows: According to the present invention ~~(Claim 29)~~, the optical disc device ~~defined in any of Claims 16 to 18~~ further includes a timing control circuit for controlling the operation timings of the time-division AD converter and the servo error signal generation circuit, wherein, when the servo error signal generation circuit performs the operation of generating plural kinds of servo error signals using the AD conversion result of the same channel which is output from the time-division AD converter, the timing control circuit makes the time-division AD converter perform AD conversion of the same channel repeatedly within one sampling period and, during the operation of generating plural kinds of servo error signals by the servo error signal generation circuit, said timing control circuit makes the timing at which acquisition of signals from all the photodetectors required for generating each servo error signal is completed, coincide with the timing at which AD conversion of the signals from all the photodetectors by the time-division AD converter is ended.

Please amend the paragraph beginning on page 33, line 1 and ending at line 16, as follows: According to the present invention ~~(Claim 30)~~, the optical disc device ~~defined in any of Claims 16 to 18~~ further includes a timing control circuit for controlling the operation timings of the time-division AD converter and the servo error signal generation circuit, wherein the time-division AD converter has a mechanism for arbitrarily controlling selection of a channel to be subjected to AD conversion, and channel switching timing; the AD conversion timing of each channel by the time-division AD converter is controlled according to the operation time of the servo error signal generation operation by the servo error signal generation circuit; and the timing control circuit makes the timing at which acquisition of signals from all the photodetectors required for generating one servo error signal by the servo error signal generation circuit is completed, coincide with the timing at which AD conversion of the signals from all the photodetectors by the time-division AD converter is ended.

Please amend the paragraph beginning on page 33, line 21 and ending on page 34 at line 10, as follows: According to the present invention ~~(Claim 31)~~, in the optical disc device ~~defined in Claim 30~~, the time-division AD converter comprises: a selector control circuit for controlling selection of a channel to be subjected to AD conversion, and channel switching timing, by outputting control signals to an input selector and an output selector; a selector for receiving the plural output signals from the photodetectors of the optical pickup, and selecting and outputting a signal of a predetermined channel at a predetermined timing that is indicated by the selector control circuit; an AD converter for AD-converting the signal outputted from the input selector to output the digitized signal; and an output selector for outputting the digitized signal outputted from the AD converter, through the channel that is indicated by the selector control circuit and selected by the input selector.

Please replace the heading "BEST MODE TO EXECUTE THE INVENTION" with --DETAILED DESCRIPTION OF THE INVENTION-- in line 5 on page 38 of the specification.

Please cancel the heading "APPLICABILITY IN INDUSTRY" in line 13 on page 94 of the specification.